

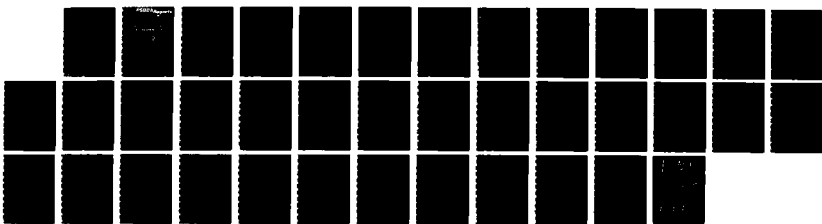
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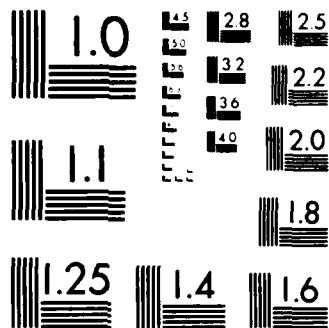
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MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963-A



US Army Corps
of Engineers
Seattle District

PSDDA *Reports*

Puget Sound Dredged Disposal Analysis



Washington State Dept.
of Natural Resources

THE FILE COPY

AD-A184 831

OPEN-WATER DISPOSAL OF MATERIAL IN CANADIAN WATERS

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EPA
Region 10



ECOLOGY

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OPEN-WATER DISPOSAL OF MATERIAL
IN CANADIAN WATERS

Submitted to:

U.S. Environmental Protection Agency
Region 10

In support of:

The Puget Sound Dredged Disposal Analysis

Prepared by:

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1.0 INTRODUCTION

The Puget Sound Dredged Disposal Analysis Program (PSDDA) is part of the overall effort to develop a comprehensive water quality management plan for Puget Sound waters. One facet of disposal under consideration is the classification of dredge-disposal sites according to the degree of contamination of material accepted. The Strait of Juan de Fuca, due to its depth and relatively high circulation, may qualify as a disposal site for some material unsuitable for Puget Sound disposal. Equal in importance to the physical and environmental feasibility of disposal in the Strait of Juan de Fuca is the potential conflict with Canadian disposal practices and regulations. Therefore, a review of Canadian open-water, unconfined disposal regulations has been conducted.

Disposal of dredged and other materials into Canadian marine waters is regulated through a system of permits specified by the Ocean Dumping Control Act (ODCA). This act was passed in 1975 in order to fulfill Canada's commitment to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, known more simply as the London Dumping Convention (LDC). The terms and conditions of the ODCA permits vary with the type of substance being dumped. The requirements deal specifically with three different kinds or "schedules" of substances (Table 1). Schedule I lists prohibited substances which present major bioaccumulation, toxicity, and persistence problems to the aquatic environment and human health, and may be disposed only in trace amounts. Schedule II lists potentially hazardous materials, which if present in large quantities or disposed of improperly may be harmful. Schedule III includes factors of interest in all disposal operations, such as the quantity of material to be disposed, the disposal site, and the toxicity of the material.

The permitting review process takes into account the schedule designations when decisions of acceptability and siting of disposal operations are made. These decisions are made on a case-by-case basis according to technical evaluation guidelines. The option of disposal

TABLE 1
SCHEDULE SUBSTANCES AND CONCENTRATION LIMITS

SCHEDULE I "Prohibited" substances known to present serious threats to the marine environment due to toxicity, accumulation, and persistence. Only trace amounts can be disposed and the associated risks must be minimal.

<u>Substance</u>	<u>Limit</u>
Mercury and mercury compounds phase	0.75 ppm solid phase/1.5 ppm liquid phase
Cadmium and cadmium compounds	0.6 ppm solid phase/3.0 ppm liquid phase (1 ppm solid phase guideline used in practice)
Persistent plastics and synthetic materials	4 percent by volume in a suitably comminuted form
Crude oil, fuel oil, diesel oil, lubricating oils, and hydraulic fluids	10 ppm n-hexane extractable substances (1,500 ppm guideline used in practice)
Organohalogenated compounds, such as PCBs	0.01 of a concentration found toxic to sensitive organisms (1 ppm PCBs guideline used in practice)
Highly radioactive material	10 Ci/metric ton α -active waste with half-life exceeding 50 years 1000 Ci/metric ton β/γ -waste (excluding tritium) 10^6 Ci/metric ton tritium
Substances produced for biological and chemical warfare	(No limits/procedures specified)

SCHEDULE II Restricted substances which may pose significant hazards when disposed. These substances may be dumped if not present in large quantities and if care is taken to isolate the waste.

<u>Substance</u>	<u>Limit</u>
Arsenic, lead, copper, zinc, beryllium, chromium, nickel, vanadium, and their compounds	1000 ppm each

TABLE 1 (Continued)
SCHEDULE SUBSTANCES AND CONCENTRATION LIMITS

SCHEDULE II (Continued)

<u>Substance</u>	<u>Limit</u>
Cyanides and flourides	1000 ppm each
Pesticides and by-products (excluding Schedule I)	1000 ppm total
Organosilicons	(No limits/procedures specified)
Containers and scrap metal	(No limits/procedures specified)
Low-level radioactive waste	(No limits/procedures specified)
Bulky materials waste that presents a hazard to fishing and navigation	(No limits/procedures specified)

Schedule III Substances not listed in Schedules I and II and general properties of the material and disposal site. Included are factors which must be considered in all disposal permits.

Properties and Pertinent Factors

Total quantity of material for disposal

Bulk composition of material

General physical/chemical/biological properties

General toxicity

Site and method of disposal

Receiving water characteristics

Effects on marine setting and marine life

Impacts on fishing and navigation

Current and tidal influences

Effects on recreation

in the Strait of Juan de Fuca versus other Canadian marine waters receives no special consideration; that is, the same factors are weighed in all site selections. The requirements for characterization of the dredged material and the evaluation and siting processes for disposal in Canadian waters are investigated in this report. A comparison of Canadian and Puget Sound permitting practices is then presented.

2.0 PERMIT APPLICATION AND CHARACTERIZATION REQUIREMENTS

In order to dispose of material in Canadian waters, an ODCA permit must be obtained from the Environmental Protection Service (EPS). Permit application forms are available for five different activities: dumping/loading; dumping/loading of dredged material; incineration at sea; disposal of man-made structures; and disposal on ice (Appendix A). Disposal of dredged material comprises the vast majority of disposal activity. Information on the applicant, the carrier, general dumping information, the dump site, the manner in which dumping will occur, and properties of the material to be disposed is requested. Some of this information, particularly that pertaining to the dump site, the dumping procedures, and the characteristics of the material may not be required or available during the initial stages of the permitting process.

An initial review of the application is conducted to assess the situation and determine what testing is required. The majority of dredging maintenance projects, for which previous chemical analyses have been conducted, require no additional testing or only for a few specified parameters. If information is lacking, if some change in the sediment compared to previous testing is believed to have occurred, or if a site is known to be located near a contaminant source, first stage testing is required. The protocol for first stage sampling is usually one surficial grab sample per 5,000 cubic meters of material to be dredged and even distribution of samples over the area to be dredged. Core samples at least .5 meter long may be required when dredging will exceed 1 meter in depth. If the first stage sampling results indicate that contaminants are well within limits, no further testing is necessary. If the concentrations approach or exceed the limits, extensive sampling is required.

Formalized extensive sampling programs have not yet been established by EPS. "Protocols for Sample Site Selection and Sampling Procedures" (EPS Atlantic 1979) provides some guidelines, but the procedures have been updated over the past 6 years or are customized to the particular situation.

The choice of substances selected for analysis is also not uniform, but is based on the particular situation and emphasizes Schedule I and Schedule II contaminants. Often, the Schedule I substances of mercury, cadmium, organochlorine compounds, and oils along with lead from Schedule II are selected. Other substances are chosen based on anticipated contamination from nearby industries, spills, or population centers. For example, spoils located near a wood preservative plant may be examined for pentachlorophenol. Analyses must be performed on a dry-weight basis. Although liquid concentration limits are listed, requirements for liquid tests are very infrequent. "Methods for Sampling and Analyses of Marine Sediments and Dredged Materials" (A. Walton, Ocean Dumping Report 1, 1978) serves as a guide.

In addition to chemical analyses, physical and biological assessments may be required. Quantities of materials to be disposed, particle-size analysis, and qualitative descriptions (such as presence of rock, sand, or wood chips) are among the usual information specified in Schedule III. Bioassays are used as a criteria for organohalogenes. All of the application forms have a section for bioassay results; however, bioassays are rarely requested until after the chemical analyses to determine compliance have been submitted. For example, PCBs must exceed 1 ppm before a bioassay would be required. To date, bioassays have been performed primarily through federally-sponsored research projects. The bioassays are usually conducted on a solid sample and have utilized various species and exposure times. The absence of a standardized bioassay has led to inconclusive results.

The Department of Fisheries and Oceans helps to finance research aimed at questions of biological impacts of sediments, extractability of chemical forms, and appropriate sampling protocols. In this manner, the burden of assessing an impact falls less frequently on the dredging proponent and instead is available as general information for use in several situations. In an Ocean Dumping Control Act Research Fund project, bioassays are performed on coastal sediments known to be contaminated. Another study underway is directed at assessing sampling protocols in contaminated harbors. The forthcoming recommendations will be tested for suitability and then be incorporated into policy or guidelines.

3.0 PERMIT APPLICATION EVALUATION

Issuance or denial of a permit for open-water disposal is based primarily on the limits of Schedule I and Schedule II substances (Table 1). Schedule III factors are considered in all disposal situations but do not exclusively determine whether a permit is granted or not. Exceedence of a single limit is sufficient to deny a permit. However, in some cases a permit may be granted in spite of a minor finding of exceedence. Prescribed limits for cadmium and n-hexane extractable oils have been found to be less than naturally-occurring concentrations. Therefore, limits for cadmium and for n-hexane extractable oils are based on background levels at the particular site; typical values are 1 ppm and 1,500 ppm, respectively. Materials with concentrations of substances greater than the indicated limits may also be approved for open-water disposal if the materials can be "rapidly rendered harmless" using mitigative measures such as capping or reburial of contaminated layers when dredging. Natural physical, chemical, and biological processes at the designated disposal site (for example, depth of water or dispersive currents) may also be utilized to mitigate potential adverse impacts of disposal. The prescribed limits for organohalogen compounds are specified as one-one hundredth of the concentration found to be toxic to sensitive organisms when it is determined that a bioassay is necessary.

In addition to the mentioned requirements, all other federal acts must be satisfied and appropriate permits obtained prior to issuance of an ODCA disposal permit. Applicable federal acts and a brief explanation of requirements are presented in Table 2. A permit is required under the Navigable Waters Protection Act, but generally only if dumping is to occur in waters less than 20 fathoms deep. Most of the disposal activities, including capping, are addressed by the ODCA.

TABLE 2
OTHER CANADIAN FEDERAL ACTS APPLICABLE TO OPEN-WATER DISPOSAL

Act	Requirements/Restrictions
Arctic Water Pollution Prevention Act	Permit for disposal of waste in specified arctic waters
Canada Shipping Act	Discharge of regulated pollutants is prohibited except under special regulations
Navigable Waters Protection Act	Minister of Transport approval required for works pertaining to navigable waterways, including dredging and dumping
Fisheries Act	Prohibits, except as authorized, deposition of deleterious materials into waters frequented by fish
Migratory Birds Convention Act	Deposition of oil or other substances in waters or areas frequented by migratory birds is prohibited
Public Works Act	Authorizes navigation improvements and establishment of contained dredge spoil sites

4.0 DISPOSAL AND DISPOSAL SITES

In addition to granting permits for ocean disposal, the EPS specifies the disposal site following recommendations from the Regional Ocean Dumping Advisory Committee (RODAC), which consists of representatives from EPS and the Department of Fisheries and Oceans, and other selected personnel. Once the dredged material has been approved for open-water disposal, it may generally be deposited at any site. That is, there is no formal site ranking process specifying the type of material they may receive. Assuming the particular disposal situation is not unusual, EPS will specify the closest designated site in order to minimize transport costs.

Sometimes other considerations exclude disposal at the nearest site. Proximity to recreation, fishing, and navigation areas, visual impacts, depth of the disposal site, quantity and composition of the material for disposal, and tidal influences are among the social, economic, and environmental impacts reviewed in selecting a disposal site. For example, disposal at a particular designated site may be rejected due to aesthetic concerns although the spoils are not contaminated. Also, the general selection philosophy is in favor of non-dispersive sites over dispersive sites. When dispersion is necessary to rapidly render the spoils harmless, a deep, high-circulation site may be utilized. In particular, the North Pacific Ocean Dumpsite (see Figure 1) has been established for such deep-water disposal.

Monitoring during disposal may be required in cases involving a fisheries resource concern. Timing restrictions due to tidal or seasonal factors may be incorporated into the ODCA permit conditions or may be specified in separate correspondence. Long-term monitoring is not required of the dredging proponent, but instead is conducted by EPS to analyze sediment chemistry trends.

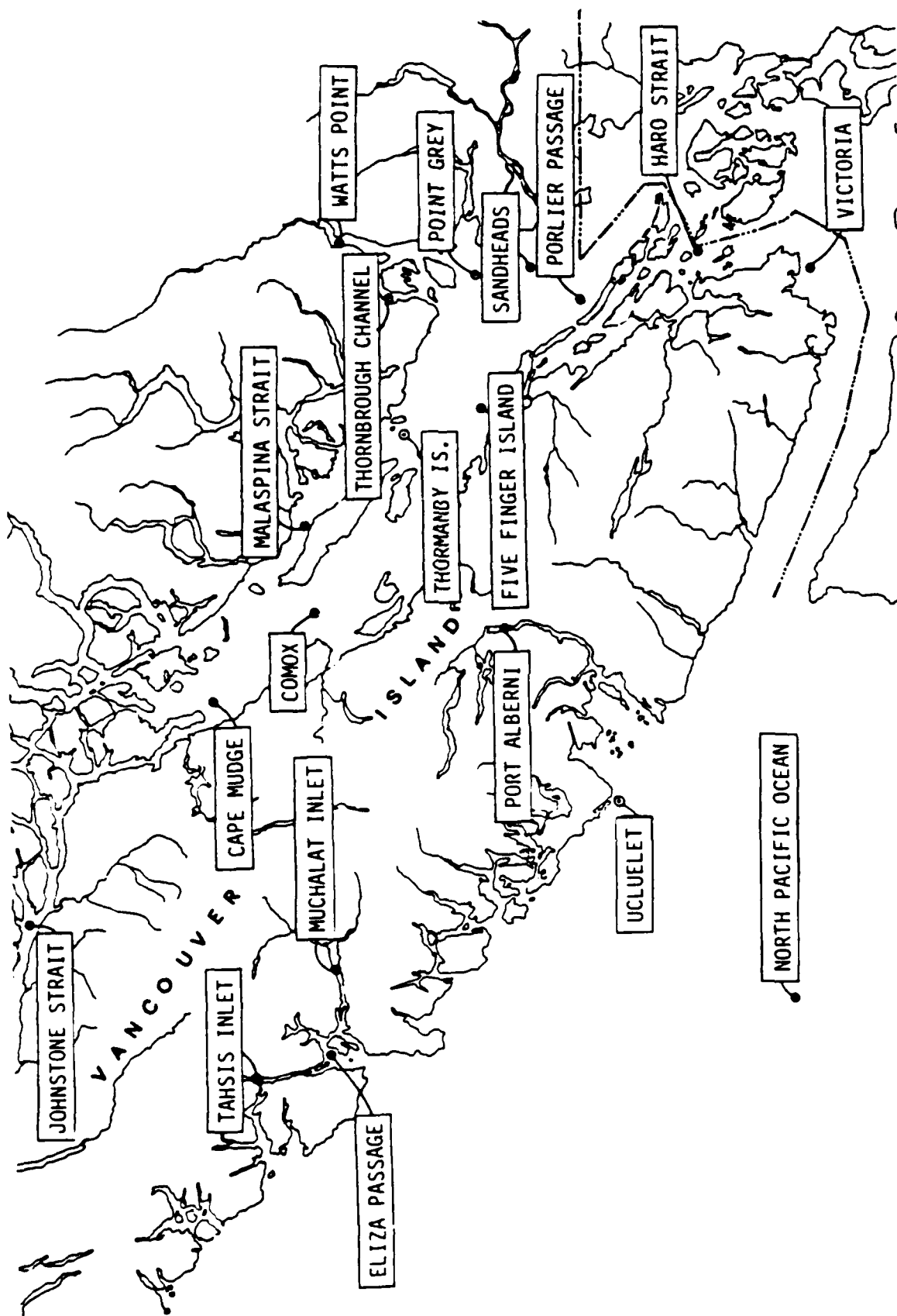


FIGURE 1 ACTIVE OCEAN DUMP SITES IN SOUTHERN BRITISH COLUMBIA

To the greatest extent possible, existing disposal sites are utilized. Two sites located near the Strait of Juan de Fuca are near Victoria and in Haro Strait (Figure 1). Only 3-4 new sites have been established in west coast waters in the past 6-7 years. Potential new sites are assessed using available information on competing nearby activities, oceanographic and chemical characteristics, and fisheries and environmental impacts. Occasionally, field tests are performed to supplement the available data. The time required to establish a new site is variable, as all concerned agencies must concur in the selection. In the past, two weeks to two months has been normal. Rarely has the siting process taken as long as one year.

5.0 COMPARISON OF PUGET SOUND AND CANADIAN REVIEW PROCESSES

Technical evaluation procedures for disposal of material in open-waters are less standardized within the Canadian ODCA than for the U.S. EPA, which uses the Interim Sediment Criteria established by the Washington Department of Ecology for evaluation of dredged material disposal in Puget Sound. The same general process which includes site identification, testing based on known characteristics of the dredging site, and disposal decisions based on established criteria is utilized in both cases. However, the ODCA places more emphasis on case-by-case analysis whereas the Puget Sound evaluation process incorporates testing for all dredging/disposal operations commensurate with dredge site ranking. The two processes are summarized for comparison in Table 3.

Briefly, the evaluation process used in Puget Sound begins with identifying the "level of concern" (low, moderate, or high) of the dredge site based on proximity to pollution sources and the size of the dredging project. Basic metals and conventional pollutant analyses are required for all levels of concern. For moderate and high concern areas, an amphipod bioassay and analyses of various priority pollutants are also required. Composite core samples are used for low and moderate concern areas, while high concern areas are sampled on a case-by-case basis depending on the amount and depth of dredging. For example, confined disposal by capping is handled on a case-by-case basis. In order to be approved for unconfined open-water disposal, the dredged material contaminants must be within prescribed criteria (Table 4) and pass the amphipod bioassay. In addition, the judgement of permitting staff may be applied in denying permits based on contaminants not listed under the standard parameter list.

The Canadian ODCA evaluation does not contain established levels of concern with commensurate testing and sampling protocols. Rather, historical chemical data and local contaminant sources are used to determine sampling requirements. Sampling is generally minimal until it has been established that more information is needed. Evaluations

TABLE 3
COMPARISON OF PUGET SOUND AND CANADIAN
OPEN-WATER DISPOSAL EVALUATIONS

	Puget Sound Interim Criteria	Canada
<u>Characterization</u>		
Dredge Site Classifications	Low/moderate/high areas of concern defined by project size and pollution sources	Informal classification based on historical data and contamination sources
Sampling Requirements	Greater for higher concern areas; required for all sites; core sample number and depth depend on size and concern ranking	Informal - based on suspected contamination, previous testing, size of project; testing requirements may be waived
Testing Parameters	Physical, conventional, metals for all sites; amphipod bioassay and base/neutral extraction for priority pollutants for moderate/high concern areas; PCB's, pesticides for high concern areas	No standardized tests; Hg, Cd, Pb, organohalogen typically required in contaminated sites; Other Schedule I and II substances often measured; bioassays required only if chemical concentration indicates need; much emphasis on previous testing and location to contamination sources
Collection/Analytical Methods	Dry weight basis; collection/transport by trained personnel; qualified lab required; Swartz (1984) amphipod bioassay; EPA Test Methods, SW-846 (1982) for physical/ chemical tests	Dry weight basis; A. Walton (1978) as guideline for analysis procedures

TABLE 3 (continued)

COMPARISON OF PUGET SOUND AND CANADIAN
OPEN-WATER DISPOSAL EVALUATIONS

	Puget Sound Interim Criteria	Canada
<u>Decision Process</u>		
Chemical	Concentrations within criteria for metals, organic compound groups, total PCB's necessary to allow open-water disposal	If within Schedule I and II limits, open-water disposal allowed
Biological	Minimum amphipod survival must occur to allow disposal; additional bioassays may be performed for borderline cases, which will be interpreted by permitting staff	Defined/interpreted on case-by-case basis
Other Parameters	Conventional pollutants used to determine likely contamination and the need for more testing	Schedule III factors (material/siting) must be considered
Qualifiers	Additional tests may exclude open-water disposal option. Continued disposal handled on case-by-case basis.	Mitigative disposal measures, demonstration of "rapidly rendered harmless" following disposal may allow open-water disposal if chemical criteria are not met
<u>Disposal Siting</u>		
	Some criteria differences (Port Gardner and Four mile Rock); all other sites equivalent	No formal categorization; closest designated dump site usually chosen, subject to impacts on other uses of water; establishment of new sites discouraged

TABLE 3 (continued)

COMPARISON OF PUGET SOUND AND CANADIAN
OPEN-WATER DISPOSAL EVALUATIONS

Puget Sound Interim Criteria	Canada
<u>General</u>	
Permits issued for up to 5 years of maintenance dredging. Case-by-case evaluation for confined disposal	Permits issued per operation, not to exceed 12 months; situations handled on case-by-case basis; much judgement applied for particulars of each case; emphasis placed on previous chemical data, likely contamination sources

TABLE 4

COMPARISON OF DIFFERENT PUGET SOUND SEDIMENT CRITERIA AND LEVELS

Sediments	Apparent Effect Thresholds ^{1/} Commencement Bay Toxicity	Four Mile Rock Criteria ^{2/}	Port Gardner Criteria ^{3/}	Commencement Bay ^{4/}	Interim Puguet Sound Criteria	Port Gardner Disposal Site	Puget Sound Background High	6/ Low
METALS (PPH)								
Arsenic	93.0	85.0	7.0	13.0	12.5	10.3	8.2	5.0
Cadmium	5.8	5.8	0.5	0.28	0.7	0.24	0.49	0.38
Copper	310.0	310.0	41.0	53.0	68.0	45.5	45.0	33.0
Lead	660.0	300.0	33.0	27.0	33.0	25.2	41.0	22.0
Mercury	0.59	0.52	0.15	0.11	0.15	0.08	0.17	0.05
Zinc	490.0	260.0	105.0	74.0	105.0	85.9	100.0	86.0
ORGANIC COMPOUNDS (PPB)								
LMM Aromatic	5,200.0	5,200.0	680.0	308.0	680.0	642.0	479.0	57.49
Hydrocarbons								
HMM Aromatic	12,000.0	17,000.0	2,690.0	196	2,690.0	2,917.0	4,461.0	600.0
Hydrocarbons								
TOTAL PCBs	420.0	1,100.0	380.0	39.0	380.0	32.0 (1254 only)	365.0	66.0

1/ Summary report for the Commencement Bay Nearshore/Tideflats Remedial Investigation, Draft Report, June 1985, Tetra Tech.

2/ Interim Decision Criteria for Unconfined Disposal of Dredge Material at the Four-Mile Rock Open Water Disposal Site. EPA and WDOE, June 1984.

3/ Interim Decision Criteria for Unconfined Disposal of Dredge Material at the Port Gardner Open Water Disposal Site. Draft, EPA, May 1985.

4/ Commencement Bay Unconfined Disposal Site Sediments. Limited data 1983. EPA.

5/ U.S. Navy Sediment Evaluation for Homeporting Studies, Sample Station EDS-5, Port Gardner, 1984.

6/ Metro TSPS Study, High and Low from Area DD, Stations 400165, 400165, 50040, 50041, 50042, 50043, CR003, S0009.

are based primarily on LDC designated limits; however, these serve only as guidelines. In comparison to Puget Sound limits, LDC limits are high or undefined (Table 5).

TABLE 5
SELECTED PUGET SOUND AND CANADIAN
CONTAMINANT LIMITS

Substance	Canadian Limit (ppm)	Puget Sound Limit (ppm)*
Arsenic	1000	12.5
Cadmium	0.60	0.7
Copper	1000	68
Lead	1000	33
Mercury	0.75	0.15
Zinc	1000	105

* WDOE Interim Puget Sound Criteria. See Table 4 for complete listing.

Bioassays are typically not required in the Canadian ODCA evaluation, except when chemical concentrations of toxic chemicals indicate the need. Exceedence of one standard or the judgement of the permitting staff is sufficient to disqualify open-water disposal options. However, standards are not rigid; a dredging proponent may demonstrate that the material will be safely disposed. Disposal sites are designated by the EPS (RODAC) permitting staff according to proximity and nearby uses of the waters.

APPENDIX A

OCEAN DUMPING CONTROL ACT PERMIT APPLICATION FORMS



Environnement Canada Environnement Canada

APPLICATION FOR A PERMIT TO DUMP AND/OR TO LOAD SUBSTANCES FOR DUMPING AT SEA
DEMANDE D'AUTORISATION D'IMMERSION OU DE CHARGEMENT DE SUBSTANCES À IMMERGER

PART A BASIC INFORMATION		PARTIE A RENSEIGNEMENTS GÉNÉRAUX	
1 NAME OF APPLICANT / Nom du requérant		TEL. NO / NO de tél.	
ADDRESS / Adresse		2 TYPE OF BUSINESS / Type d'entreprise	
3 NAME(S) OF INDIVIDUAL(S) RESPONSIBLE FOR LOADING AND DUMPING ON BEHALF OF APPLICANT Nom de la personne chargée du chargement et de l'immersion au nom du requérant	NAME(S) / Nom(s)	TITLE(S) / Titre(s)	TEL. NO(S) / NO(s) de tél.
4 SUBSTANCE (Give chemical, common, trade, or other name) Substance (donner l'appellation chimique, commune, commerciale ou autre)		FORM Forme <input type="checkbox"/> SOLID Solide <input type="checkbox"/> SLUDGE Boue <input type="checkbox"/> GASEOUS Gaz <input type="checkbox"/> LIQUID Liquide OTHER (specify) Autre (préciser)	
TOTAL Q'TY TO BE DUMPED Quantité totale à immerger	5 SOURCE OF SUBSTANCE Source de la substance	NAME OF FIRM (if applicable) Nom de la société (s'il y a lieu)	
ADDRESS / Adresse		TYPE OF BUSINESS / Type d'entreprise	TEL. NO / NO de tél.
DESCRIBE PREVIOUS DISPOSAL METHODS / Décrire les méthodes d'élimination utilisées auparavant			
6 DESCRIBE ACTIVITY FROM WHICH SUBSTANCE ORIGINATES Décrire l'activité responsable de la formation de la substance		7 WHY IS IT NECESSARY TO DUMP SUBSTANCE AT SEA? Pourquoi est-il nécessaire d'immerger la substance en mer?	
PART B CARRIER INFORMATION		PARTIE B RENSEIGNEMENTS SUR LE TRANSPORTEUR	
8 NAME OF CARRIER COMPANY Nom de la compagnie de transport		ADDRESS / Adresse	
9 NAME OF CARRIER OWNER Nom du propriétaire du transporteur		ADDRESS / Adresse	
10 NAME OF CARRIER'S AGENT (if applicable) Nom de l'agent du transporteur (s'il y a lieu)		ADDRESS / Adresse	
11 NAME(S) OF INDIVIDUAL(S) RESPONSIBLE FOR LOADING AND DUMPING ON BEHALF OF CARRIER Nom de la personne chargée du chargement et de l'immersion au nom du transporteur		NAME(S) / Nom(s)	TITLE(S) / Titre(s)
12 TYPE OF CARRIER / TYPE DE TRANSPORTEUR		TEL. NO(S) / NO(s) de tél.	
(a) SHIPS Bateaux	NAME OF SHIP Nom du bateau		NAME OF MASTER Nom du capitaine
	OFFICIAL NUMBER Numéro officiel	OVERALL LENGTH Longueur hors-tout	EXTREME BREADTH Largeur au fort
(b) AIRCRAFT Aéronefs	TYPE Type		MODEL Modèle
	REGISTRATION MARKS Marques d'immatriculation	MAX. GROSS WEIGHT AS AUTHORIZED BY CERTIFICATE OF AIRWORTHINESS Poids brut max. autorisé par le certificat de navigabilité	NATIONALITY Nationalité
(c) UNREGISTERED CARRIERS OR OTHER STRUCTURES Transporteurs non immatriculés et autres ouvrages	DESCRIBE CARRIER OR OTHER STRUCTURE Décrire le transporteur ou l'ouvrage		NAME OR NUMBER (if any) Nom ou numéro (s'il y a lieu)
	EXTREME BREADTH Largeur au fort		DEADWEIGHT TONNAGE Chargement en lourd
		NAME OF PILOT IN COMMAND Nom du pilote commandant de bord	
		NAME OF MASTER, PILOT, OR OTHER INDIVIDUAL IN COMMAND Nom du capitaine, pilote ou autre commandant de bord	

PART C DUMPING INFORMATION		PARTIE C RENSEIGNEMENTS SUR L'IMMERSION				
13 PORT OF DEPARTURE Port de départ	14 PROPOSED LOADING DATE(S) Date(s) proposée(s) pour le chargement FROM / de TO / à		15 METHOD OF LOADING AND STOWAGE PROPOSED Méthode proposée de chargement et d'arrimage			
16 PROPOSED DATE(S) OF DUMPING Date(s) proposée(s) de l'immersion	QUANTITY PER DUMPING Quantité immergée par opération					
17 WHERE 16 DOES NOT APPLY STATE Si 16 ne s'applique pas, indiquer		REQUIRED DURATION OF PERMIT Durée nécessaire de l'autorisation FROM / de TO / à		TOTAL QUANTITY Quantité totale	FREQUENCY AND RATE OF DUMPING Fréquence et cadence des opérations	
18 DESCRIBE ROUTE FROM LOADING SITE TO DUMP SITE / Décrire le trajet du point de chargement au lieu d'immersion						
19 METHOD OF DISPOSAL / MÉTHODE D'ÉLIMINATION						
(a) FORM OF PACKAGING OR CONTAINERIZATION Méthode d'emballage et de conditionnement			(b) SPEED OF CARRIER DURING DISCHARGE Vitesse du transporteur au cours du déchargement		(c) DISCHARGE RATE Cadence de déchargement	
(d) DEPTH OF DISCHARGE (Below sea surface or altitude above sea surface if applicable) Profondeur du déchargement (sous le niveau de la mer ou altitude au-dessus du niveau de la mer s'il y a lieu)			(e) DESCRIBE CARRIER TRACK WHILE DUMPING Décrire le trajet du transporteur au cours de l'immersion			
PART D DUMP SITE INFORMATION			PARTIE D RENSEIGNEMENTS SUR LE LIEU D'IMMERSION			
20 GEOGRAPHICAL COORDINATES OF DUMPSITE Coordonnées géographiques du lieu d'immersion		LAT	LONG	21 DEPTH OF SEA AT PROPOSED DUMPSITE Profondeur de la mer au lieu d'immersion		
22 REASON FOR SELECTION OF PROPOSED SITE / Raisons du choix du lieu proposé						
PARTIE E PROPERTIES OF SUBSTANCES TO BE DUMPED			PARTIE E PROPRIÉTÉS DE LA SUBSTANCE A IMMERGER			
NOTE: In carrying out any necessary tests the analyst should follow documented procedures and be prepared to describe these procedures in detail. NOTE: Pour effectuer les essais nécessaires, l'analyste doit suivre les méthodes indiquées et être prêt à les décrire en détail						
23 PHYSICAL PROPERTIES / PROPRIÉTÉS PHYSIQUES						
(a) LIQUIDS Liquides	SPECIFIC GRAVITY Poids spécifique	VAPOUR PRESSURE Tension de vapeur	MISCIBILITY WITH SEAWATER Miscibilité avec l'eau de la mer	VISCOSITY Viscosité	ODOUR Odeur	COLOUR Couleur
(b) SOLIDS SOLUBLE IN WATER Solides solubles dans l'eau	SPECIFIC GRAVITY Poids spécifique	SOLUBILITY IN SEAWATER Solubilité dans l'eau de mer		ODOUR Odeur	COLOUR Couleur	
(c) SOLIDS INSOLUBLE IN WATER Solides insolubles dans l'eau	PARTICLE SIZE DISTRIBUTION AND SETTLING RATE IN SEAWATER Grossueur des particules et taux de sédimentation dans l'eau de mer			ODOUR Odeur	COLOUR Couleur	
24 CHEMICAL AND BIOCHEMICAL PROPERTIES / PROPRIÉTÉS CHIMIQUES ET BIOCHIMIQUES						
(a) ARE SUBSTANCES NAMED IN SCHEDULES I AND II OF THE ACT PRESENT? Y a-t-il des substances mentionnées aux annexes I et II de la Loi			IF YES, IN WHAT CONCENTRATIONS Si oui, dans quelles concentrations			
<input type="checkbox"/> YES Oui			<input type="checkbox"/> NO Non			
(b) CHEMICAL STABILITY Stabilité chimique	OXIDATION REDUCTION POTENTIAL Potentiel d'oxydoreduction		CHEMICAL OXYGEN DEMAND Demande chimique d'oxygène			
	REACTIVITY WITH SEAWATER Réactivité avec l'eau de mer		CHANGE ON EXPOSURE TO ATMOSPHERE AND SUNLIGHT Changement au contact de l'atmosphère et de la lumière du soleil			

(c) BIOCHEMICAL BEHAVIOR Comportement biochimique	BIOCHEMICAL OXYGEN DEMAND AT 20° Demande biochimique d'oxygène à 20°	BIOTRANSFORMATION Biotransformation
	SOLUBILITY IN ANIMAL OR PLANT LIPIDS Solubilité dans les lipides animaux et végétaux	IF SUBSTANCE IS A PESTICIDE, GIVE PCP REGISTRATION NO. OR COMMON NAME S'il s'agit d'un pesticide, donner le numéro d'enregistrement des produits antiparasitaires ou le nom commun
25 BIOACCUMULATION BY MARINE ORGANISMS / BIO-ACCUMULATION PAR LES ORGANISMES MARINS		
(a) CONCENTRATION FACTOR FOR FISH, MACROINVERTEBRATES AND PLANKTON Facteur de concentration pour le poisson, les macro-invertébrés et le plancton	(b) RATE OF UPTAKE AND RETENTION (biological half life) Taux d'ingestion et de rétention (demi-vie biologique)	
(c) TAINING, COLOUR CHANGE AND OTHER UNDESIRABLE CONTAMINANT EFFECTS ON SEAFOOD Coloration, changement de couleur et autres effets de contamination indésirables sur les fruits de mer		
26 TOXICITY TO MARINE ORGANISMS (96 hour LC ₅₀ in mg/l) Toxicité pour les organismes marins CL ₅₀ après 96 heures, en mg/l		
27 DESCRIBE HAZARD TO HUMAN HEALTH BY / Décrire les dangers pour la santé humaine par		
(a) ORAL INTAKE (LD ₅₀ in mg/kg) Ingestion orale (DL ₅₀ en mg/kg)		(b) SKIN CONTACT Contact avec la peau
(c) INHALATION / Inhalation		

When the applicant is a corporation, give the title or capacity and telephone number of the person signing this application.
Si le requérant est une société, donner le titre ou la fonction et le numéro de téléphone du signataire de la demande.

DATE

SIGNATURE OF APPLICANT / Signature du requérant

TITLE / Titre

TEL. NO. / N° de tél.



Environment Canada Environnement Canada

Environmental Protection Protection de l'environnement

FORM 2
FORMULE 2APPLICATION FOR A PERMIT TO DUMP AND/OR TO LOAD DREDGED MATERIAL
FOR THE PURPOSE OF DUMPINGDEMANDE D'AUTORISATION D'IMMERSION OU DE CHARGEMENT DE MATIÈRES
DRAGUÉES DESTINÉES À L'IMMERSION

PART A - BASIC INFORMATION / PARTIE A - RENSEIGNEMENTS GÉNÉRAUX

1 NAME OF APPLICANT / Nom du requérant		TEL. NO. / N° de tél.	
ADDRESS / Adresse		2 TYPE OF BUSINESS / Type d'entreprise	
3 NAME(S) OF INDIVIDUAL(S) RESPONSIBLE FOR LOADING AND DUMPING ON BEHALF OF APPLICANT Nom de la personne chargée du chargement et de l'immersion au nom du requérant	NAME(S) / Nom(s)	TITLE(S) / Titre(s)	TEL. NO(S) / N°(s) de tél.
4 WHY IS IT NECESSARY TO DUMP THIS MATERIAL AT SEA? / Pourquoi est-il nécessaire d'immerger ces matières en mer?			

PART B - DREDGING INFORMATION / PARTIE B - RENSEIGNEMENTS SUR LE DRAGAGE

5 SOURCE OF SUBSTANCE Source de la substance	NAME OF FIRM (if applicable) Nom de la société (s'il y a lieu)	ADDRESS / Adresse	
TYPE OF BUSINESS / Type d'entreprise		DESCRIBE PREVIOUS DISPOSAL METHODS Décrire la méthode d'élimination utilisée auparavant	
6 DESCRIBE ACTIVITY FROM WHICH SUBSTANCE ORIGINATES Décrire l'activité responsable de la formation de la substance		7 NAME OF FIRM OR AGENCY WHO WILL CARRY OUT PROPOSED DREDGING Nom de l'entreprise ou de l'organisme qui effectuera le dragage proposé	8 DREDGE SITE (include map or chart) Zone de dragage (inclure une carte ou plan) Lat.: Long.:
9 MATERIAL TO BE DREDGED (percent by volume) Matières à draguer (pourcentage par volume) <input type="checkbox"/> CLAY Argile <input type="checkbox"/> SILT Limon <input type="checkbox"/> MUD Boue <input type="checkbox"/> SAND Sable <input type="checkbox"/> GRAVEL Gravier <input type="checkbox"/> ROCK Roches		OTHER (specify) Autre (préciser)	10 VOLUME TO BE DREDGED Volume à draguer
11 TYPE OF DREDGE / Type de drague <input type="checkbox"/> CLAM Drague à benne à demi-coquilles <input type="checkbox"/> SUCTION (give line length in ft.) Drague suceuse (donner la longueur de ligne en pieds) <input type="checkbox"/> SUCTION HOPPER Drague portaise à suction <input type="checkbox"/> DRAG LINE Excavateur à benne traînante		OTHER (specify) Autres (préciser)	
12 REASON FOR DREDGING / Raisons du dragage		13 PROPOSED DATES OF DREDGING / Dates proposées pour le dragage	

PART C - CARRIER INFORMATION / PARTIE C - RENSEIGNEMENTS SUR LE TRANSPORTEUR

14 NAME OF CARRIER / Nom du transporteur	ADDRESS / Adresse	TEL. NO. / N° de tél.	
15 NAME OF CARRIER OWNER / Nom du propriétaire du transporteur	ADDRESS / Adresse	TEL. NO. / N° de tél.	
16 NAME OF CARRIER'S AGENT (if applicable) Nom de l'agent du transporteur (s'il y a lieu)	ADDRESS / Adresse	TEL. NO. / N° de tél.	
17 NAME(S) OF INDIVIDUAL(S) RESPONSIBLE FOR LOADING AND DUMPING ON BEHALF OF CARRIER Nom de la personne chargée du chargement et l'immersion au nom du transporteur	NAME(S) / Nom(s)	TITLE(S) / Titre(s)	TEL. NO(S) / N°(s) de tél.

18 TYPE OF CARRIER / Type de transporteur				
SHIPS Bateaux	NAME OF VESSEL Nom du bateau	NAME OF MASTER Nom du capitaine	PORT OF REGISTRY Port d'attache	OFFICIAL NUMBER Numéro officiel
	OVERALL LENGTH Longueur hors-tout	EXTREME BREADTH Largeur au fort	DEADWEIGHT TONNAGE Chargement en lourd	
OTHER TYPE OF CARRIER Autre type de transporteur	NAME Nom		NUMBER (if any) Numéro (s'il y a lieu)	OVERALL LENGTH Longueur hors-tout
	EXTREME BREADTH Largeur au fort		DEADWEIGHT TONNAGE Chargement en lourd	
	NAME OF OWNER Nom du propriétaire		ADDRESS OF OWNER Adresse du propriétaire	
	NAME OF MASTER, PILOT, OR OTHER INDIVIDUAL IN COMMAND Nom du capitaine, du pilote ou de tout autre commandant de bord			

PART D - DUMPING INFORMATION / PARTIE D - RENSEIGNEMENTS SUR L'IMMERSION

19 PORT OF DEPARTURE Port de départ	20 PROPOSED DATE(S) OF DUMPINGS Date(s) proposée(s) de l'immersion	QUANTITY PER DUMPING Quantité immergée par opération	
21 WHERE 20 DOES NOT APPLY, STATE: Si 20 ne s'applique pas, indiquer:	REQUIRED DURATION OF PERMIT Durée nécessaire de l'autorisation FROM / De TO / À	TOTAL QUANTITY Quantité totale	FREQUENCY AND RATE OF DUMPING Fréquence et cadence des immersions
22 DESCRIBE ROUTE TO BE FOLLOWED FROM LOADING SITE TO DUMPING SITE / Décrire le trajet du lieu de chargement au lieu d'immersion			
23 METHOD OF DISPOSAL / Méthode d'élimination			
a) SPEED OF CARRIER DURING DISCHARGE Vitesse du transporteur au cours du déchargement		b) TIME REQUIRED FOR DISCHARGE Temps requis pour le déchargement	
c) DESCRIBE CARRIER TRACK WHILE DUMPING Décrire le trajet du transporteur au cours de l'immersion		d) IF BARGE USED Chaland (s'il y a lieu) <input type="checkbox"/> TOWED Remorqué <input type="checkbox"/> SELF-PROPELLED A moteur	DISCHARGE METHOD Technique de déchargement

PART E - DUMP SITE INFORMATION / PARTIE E - RENSEIGNEMENTS SUR LE LIEU D'IMMERSION

24 GEOGRAPHICAL COORDINATES OF DUMP SITE Coordonnées géographiques du lieu d'immersion	25 DEPTH OF SEA AT PROPOSED DUMP SITE Profondeur de la mer au lieu d'immersion proposé
26 REASON FOR SELECTION OF PROPOSED SITE / Raisons du choix du lieu proposé	

PART F - PROPERTIES OF SUBSTANCES TO BE DUMPED / PARTIE F - PROPRIÉTÉS DES SUBSTANCES À IMMERGER

Applicants will note that this Part must be completed if industrial or other non-natural discharges have been made or are being made to the dredge site.
La présente partie doit être remplie s'il y a eu ou s'il y a actuellement rejet, au lieu de dragage, de substances industrielles ou autres substances non naturelles.
NOTE: In carrying out any necessary tests the analyst should follow documented procedures and be prepared to describe these procedures in detail.
NOTE: Pour effectuer les essais nécessaires, l'analyste doit suivre les méthodes indiquées et être prêt à les décrire en détail.

27 PHYSICAL PROPERTIES / Propriétés physiques						
a) LIQUIDS Liquides	SPECIFIC GRAVITY Poids spécifique	VAPOUR PRESSURE Tension de vapeur	MISCIBILITY WITH SEAWATER Miscibilité avec l'eau de mer	VISCOSITY Viscosité	ODOUR Odeur	COLOUR Couleur
b) SOLIDS SOLUBLE IN WATER Solides solubles dans l'eau	SPECIFIC GRAVITY Poids spécifique	SOLUBILITY IN SEAWATER Solubilité dans l'eau de mer		ODOUR Odeur	COLOUR Couleur	
c) SOLIDS INSOLUBLE IN WATER Solides insolubles dans l'eau	PARTICLE SIZE DISTRIBUTION AND SETTLING RATE IN SEAWATER Grosseur des particules et taux de sédimentation dans l'eau de mer					

29. CHEMICAL AND BIOCHEMICAL PROPERTIES / Propriétés chimiques et biochimiques

ARE SUBSTANCES NAMED IN SCHEDULES I AND II OF THE ACT PRESENT? ☐ YES ☐ NO
 Y a-t-il des substances mentionnées aux annexes I et II de la Loi? ☐ Oui ☐ Non

IF YES, IN WHAT CONCENTRATIONS
 Si oui, dans quelles concentrations

b1 CHEMICAL STABILITY Stabilité Chimique	OXIDATION REDUCTION POTENTIAL Potentiel d'oxydoréduction	CHEMICAL OXYGEN DEMAND Demande chimique d'oxygène
	REACTIVITY WITH SEAWATER Réactivité avec l'eau de mer	CHANGE ON EXPOSURE TO ATMOSPHERE AND SUNLIGHT Changement au contact de l'atmosphère et de la lumière du soleil
c1 BIOCHEMICAL BEHAVIOR Comportement Biochimique	BIOCHEMICAL OXYGEN DEMAND AT 20° Demande biochimique d'oxygène à 20°	BIOTRANSFORMATION Biotransformation
	SOLUBILITY IN ANIMAL OR PLANT LIPIDS Solubilité dans les lipides animaux ou végétaux	IF SUBSTANCE IS A PESTICIDE, GIVE PCP REGISTRATION NO. OR COMMON NAME S'il s'agit d'un pesticide, donner le numéro d'enregistrement des produits antiparasitaires ou le nom commun

29. BIOACCUMULATION BY MARINE ORGANISMS / Bioaccumulation par les organismes marins

a) CONCENTRATION FACTOR FOR FISH, MACROINVERTEBRATES AND PLANKTON Facteurs de concentration pour le poisson, les macro-invertébrés et le plancton	b) RATE OF UPTAKE AND RETENTION (biological half-life) Taux d'ingestion et de rétention (demi-vie biologique)
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c) TAINING, COLOUR CHANGE AND OTHER UNDESIRABLE CONTAMINANT EFFECTS ON SEAFOOD
 Coloration, changement de couleur et autres effets de contamination indésirables sur les fruits de mer

d) TOXICITY TO MARINE ORGANISMS (96 Hour LC50 in mg/l)
 Toxicité pour les organismes marins (CL50 après 96 heures, en mg/l)

30. DESCRIBE HAZARD TO HUMAN HEALTH BY / Décrire les dangers pour la santé humaine par

a) ORAL INTAKE (LD50 in mg/kg) Ingestion orale (LD50 en mg/kg)	b) SKIN CONTACT Contact avec la peau
---	---

c) INHALATION
 Inhalation

When the applicant is a corporation, give the title or capacity and telephone number of the person signing this application.
 Si le requérant est une société, donner le titre ou la fonction et le numéro de téléphone du signataire de la demande

DATE

SIGNATURE OF APPLICANT / Signature du requérant

TITLE / Titre

TEL NO. / N° de tél.

**APPLICATION FOR A PERMIT TO CARRY OUT AND/OR TO LOAD SUBSTANCES
FOR THE PURPOSE OF CARRYING OUT INCINERATION OR THERMAL DEGRADATION AT SEA
DEMANDE D'AUTORISATION D'INCINÉRATION OU DE COMBUSTION OU DE CHARGEMENT
DE SUBSTANCES DESTINÉES À L'INCINÉRATION OU LA COMBUSTION EN MER****PART A - BASIC INFORMATION / PARTIE A - RENSEIGNEMENTS GÉNÉRAUX**

1 NAME OF APPLICANT / Nom du requérant		TEL. N° / N° de tél.	
ADDRESS / Adresse		2 TYPE OF BUSINESS / Type d'entreprise	
3 NAME(S) OF INDIVIDUAL(S) RESPONSIBLE FOR LOADING AND INCINERATION ON BEHALF OF APPLICANT Nom de la personne chargée du chargement et de l'incinération au nom du requérant	NAME(S) / Nom(s)	TITLE(S) / Titre(s)	TEL. N°(S) / N°(s) de tél.
4 SUBSTANCE (Give chemical, common, trade, or other name) Substance (donner l'appellation chimique, commune, commerciale ou autre)		FORM Forme <input type="checkbox"/> SOLID Solide <input type="checkbox"/> SLUDGE Boue <input type="checkbox"/> GASEOUS Gaz <input type="checkbox"/> LIQUID Liquide OTHER (specify) Autre (préciser)	
TOTAL QUANTITY TO BE INCINERATED Quantité totale à incinérer	5 SOURCE OF SUBSTANCE Source de la substance	NAME OF FIRM (if applicable) Nom de la société (s'il y a lieu)	
ADDRESS / Adresse		TYPE OF BUSINESS / Type d'entreprise	TEL. N° / N° de tél.
DESCRIBE PREVIOUS DISPOSAL METHODS / Décrire les méthodes d'élimination utilisées auparavant			
6 DESCRIBE ACTIVITY FROM WHICH SUBSTANCE ORIGINATES Décrire l'activité responsable de la formation de la substance		7 WHY IS IT NECESSARY TO DISPOSE OF SUBSTANCE AT SEA BY INCINERATION? Pourquoi est-il nécessaire d'immerger la substance en mer par incinération?	

PART B - CARRIER INFORMATION / PARTIE B - RENSEIGNEMENTS SUR LE TRANSPORTEUR

8 NAME OF CARRIER COMPANY / Nom de la compagnie de transport		ADDRESS / Adresse		TEL. N° / N° de tél.
9 NAME OF CARRIER OWNER / Nom du propriétaire du transporteur		ADDRESS / Adresse		TEL. N° / N° de tél.
10 NAME OF CARRIER'S AGENT (if applicable) Nom de l'agent du transporteur (s'il y a lieu)		ADDRESS / Adresse		TEL. N° / N° de tél.
11 NAME(S) OF INDIVIDUAL(S) RESPONSIBLE FOR LOADING AND INCINERATION ON BEHALF OF CARRIER Nom de la personne chargée du chargement et de l'incinération au nom du transporteur	NAME(S) / Nom(s)		TITLE(S) / Titre(s)	TEL. N°(S) / N°(s) de tél.
12 TYPE OF CARRIER / Type de transporteur				
(a) SHIPS Bateaux	NAME OF VESSEL Nom du bateau	NAME OF MASTER Nom du capitaine	PORT OF REGISTRY Port d'attache	OFFICIAL NUMBER Numéro officiel
	OVERALL LENGTH Longueur hors-tout	EXTREME BREADTH Largeur au fort	DEADWEIGHT TONNAGE Chargement en lourd	
(b) AIRCRAFT Aéronefs	TYPE Type	MODEL Modèle	SERIAL NUMBER Numéro de série	NATIONALITY Nationalité
	REGISTRATION MARKS Marques d'immatriculation	MAX. GROSS WEIGHT AS AUTHORIZED BY CERTIFICATE OF AIRWORTHINESS Poids brut max. autorisé par le certificat de navigabilité		NAME OF PILOT IN COMMAND Nom du pilote commandant de bord
(c) UNREGISTERED CARRIERS OR OTHER STRUCTURES Transporteurs non immatriculés et autres ouvrages	DESCRIBE CARRIER OR OTHER STRUCTURE Décrire le transporteur ou l'ouvrage		NAME OR NUMBER (if any) Nom ou numéro (s'il y a lieu)	OVERALL LENGTH Longueur hors-tout
			EXTREME BREADTH Largeur au fort	DEADWEIGHT TONNAGE Chargement en lourd
			NAME OF MASTER, PILOT, OR OTHER INDIVIDUAL IN COMMAND Nom du capitaine, pilote ou autre commandant de bord	

PART C - DUMPING INFORMATION / PARTIE C - RENSEIGNEMENTS SUR L'IMMERSION

13 PORT OF DEPARTURE Port de départ	14 PROPOSED LOADING DATE(S) Dates proposées pour le chargement	15 METHOD OF LOADING AND STOWAGE PROPOSED Méthode proposée de chargement et d'arrimage	
16 PROPOSED DATES OF INCINERATION Date(s) proposé(s) de l'incinération	QUANTITY PER INCINERATION Quantité incinérée par opération		
17 WHERE 16 DOES NOT APPLY, STATE Si 16 ne s'applique pas, indiquer	REQUIRED DURATION OF PERMIT Durée nécessaire de l'autorisation	TOTAL QUANTITY Quantité totale	FREQ. AND DAILY RATE OF INCINERATION Fréquence et cadence quotidienne de l'incinération
18 DESCRIBE ROUTE FROM LOADING SITE TO DUMP SITE / Décrire le trajet du lieu de chargement au lieu d'immersion			
19 METHOD OF DISPOSAL / Méthode d'élimination			
SPEED OF CARRIER DURING INCINERATION Vitesse du transporteur au cours de l'incinération		DESCRIBE CARRIER TRACK DURING INCINERATION Décrire le trajet du transporteur au cours de l'incinération	
DISCHARGE HEIGHT ABOVE SEA SURFACE (discharge depth if applicable) Altitude du déchargement au-dessus du niveau de la mer (profondeur s'il y a lieu)			

PART D - DUMP SITE INFORMATION / PARTIE D - RENSEIGNEMENTS SUR LE LIEU D'IMMERSION

20 GEOGRAPHICAL COORDINATES OF DUMP SITE Coordonnées géographiques du lieu d'immersion	LAT. LONG.	21 DEPTH OF SEA AT PROPOSED DUMP SITE Profondeur de la mer au lieu d'immersion
22 REASON(S) FOR SELECTION OF PROPOSED SITE / Raisons du choix du lieu proposé		

PART E - INCINERATION OR THERMAL DEGRADATION INFORMATION**PARTIE E - RENSEIGNEMENTS SUR L'INCINÉRATION OU LA COMBUSTION**

23 PROVIDE THE FOLLOWING: (a) Drawings of incinerator showing all internal dimensions and locations. State specifications of auxiliary equipment. (b) Mass and heat balance calculations for the substance to be incinerated. (c) The latest available stack testing reports for the substance to be incinerated.		a) Illustrations de l'incinérateur indiquant toutes les dimensions et les emplacements internes. Donner les caractéristiques de l'équipement auxiliaire. b) Calculs de masse et d'équilibre thermique pour substance à incinérer. c) Rapports d'évaluation en cheminée les plus récents pour la substance à incinérer.	
24 METHOD AND RATE OF FEEDING PROPOSED Méthode et taux d'alimentation proposés		25 DESCRIBE COMBUSTION PRODUCTS AND RATE OF PRODUCTION Décrire les produits de combustion et leur taux de production	
26 DESCRIBE ON-BOARD AND ON-SITE MONITORING EQUIPMENT / Décrire l'équipement de contrôle à bord et sur le terrain			
27 DESCRIBE SAFETY PROCEDURES TO BE USED / Décrire les méthodes de sécurité qui seront appliquées			

PART F - PROPERTIES / PARTIE F - PROPRIÉTÉS

(a) SUBSTANCE TO BE INCINERATED / De la substance à incinérer

(b) COMBUSTION PRODUCTS OF INCINERATION / Des produits de combustion résultant de l'incinération

NOTE: In carrying out the following tests the analyst should follow documented procedures and be prepared to describe these procedures in detail.

NOTE: Pour effectuer les essais suivants l'analyste doit suivre les méthodes indiquées et être prêt à les décrire en détail.

28 PHYSICAL PROPERTIES / Propriétés physiques

(a) LIQUIDS Liquides	SPECIFIC GRAVITY Poids spécifique	VAPOUR PRESSURE Tension de vapeur	MISCIBILITY WITH SEAWATER Miscibilité avec l'eau de mer	VISCOSITY Viscosité	ODOUR Odeur	COLOUR Couleur
(b) SOLIDS SOLUBLE IN WATER Solides solubles dans l'eau	SPECIFIC GRAVITY Poids spécifique	SOLUBILITY IN SEAWATER Solubilité dans l'eau de mer			ODOUR Odeur	COLOUR Couleur
(c) SOLIDS INSOLUBLE IN WATER Solides insolubles dans l'eau	PARTICLE SIZE DISTRIBUTION AND SETTLING RATE IN SEAWATER Grossueur particules et taux de sédimentation dans l'eau de mer				ODOUR Odeur	COLOUR Couleur

29 CHEMICAL AND BIOCHEMICAL PROPERTIES / Propriétés chimiques et biochimiques

(a) ARE SUBSTANCES NAMED IN SCHEDULES I AND II OF THE ACT PRESENT?
Y a-t-il des substances mentionnées aux annexes I et II de la Loi?

☐ YES
Oui ☐ NO
Non

IF YES, IN WHAT CONCENTRATIONS
Si oui, dans quelles concentrations

(b) CHEMICAL STABILITY Stabilité chimique	OXIDATION REDUCTION POTENTIAL Potentiel d'oxydoréduction	CHEMICAL OXYGEN DEMAND Demande chimique d'oxygène
	REACTIVITY WITH SEAWATER Réactivité avec l'eau de mer	CHANGE ON EXPOSURE TO ATMOSPHERE AND SUNLIGHT Changement au contact de l'atmosphère et de la lumière du soleil
(c) BIOCHEMICAL BEHAVIOR Comportement biochimique	BIOCHEMICAL OXYGEN DEMAND AT 20° Demande biochimique d'oxygène à 20°	BIOTRANSFORMATION Biotransformation
	SOLUBILITY IN ANIMAL OR PLANT LIPIDS Solubilité dans les lipides animaux et végétaux	IF SUBSTANCE IS A PESTICIDE, GIVE PCP REGISTRATION NO. OR COMMON NAME S'il s'agit d'un pesticide donner le numéro d'enregistrement des produits antiparasitaires ou le nom commun

30 BIOACCUMULATION BY MARINE ORGANISMS / Bio-accumulation par les organismes marins

(a) CONCENTRATION FACTOR FOR FISH, MACRO-
INVERTEBRATES AND PLANKTON
Facteur de concentration pour le poisson, les
macro-invertébrés et le plancton

(b) RATE OF UPTAKE AND RETENTION (biological half life)
Taux d'ingestion et de rétention (demi-vie biologique)

(c) TAINING, COLOUR CHANGE AND OTHER UNDESIRABLE CONTAMINANT EFFECTS ON SEAFOOD
Coloration, changement de couleur et autres effets de contamination indésirables sur les fruits de mer

31 TOXICITY TO MARINE ORGANISMS (96 hour LC50 in mg/l)
Toxicité pour les organismes marins (CL50 après 96 heures, en mg/l)

32 DESCRIBE HAZARD TO HUMAN HEALTH BY / Décrire les dangers pour la santé humaine par

(a) ORAL INTAKE (LD50 in mg/kg)
Ingestion orale (DL50 en mg/kg)

(b) SKIN CONTACT
Contact avec la peau

(c) INHALATION / Inhalation

When the applicant is a corporation, give the title or capacity and telephone number of the person signing this application.
Si le requérant est une société, donner le titre ou la fonction et le numéro de téléphone du signataire de la demande.

DATE

SIGNATURE OF APPLICANT / Signature du requérant

TITLE / Titre

APPLICATION FOR A PERMIT TO DISPOSE OF A SHIP, AIRCRAFT OR OTHER MAN-MADE STRUCTURE AT SEA
DEMANDE D'AUTORISATION D'ABANDON D'UN BATEAU, D'UN AÉRONEF OU AUTRE OUVRAGE DE
MAIN-D'HOMME EN MER

PART A - BASIC INFORMATION / PARTIE A - RENSEIGNEMENTS GÉNÉRAUX

1 NAME OF APPLICANT / Nom du requérant		TEL. NO / NO de tél.	
ADDRESS / Adresse		2 TYPE OF BUSINESS / Type d'entreprise	
3 NAME OF INDIVIDUAL RESPONSIBLE FOR DISPOSAL ARRANGEMENTS ON BEHALF OF APPLICANT Nom de la personne chargée des dispositions d'abandon au nom du requérant		TEL. NO / NO de tél.	
NAME / Nom		TITLE / Titre	
4 GIVE FULL DESCRIPTION OF SHIP OR AIRCRAFT ETC. TO BE DISPOSED OF, INCLUDING, AS APPLICABLE: Donner une description complète du bateau, de l'aéronef, etc. à abandonner, y compris, s'il y a lieu			
SHIP / Bateau	NAME OF SHIP Nom du bateau	PORT OF REGISTRY Port d'attache	OFFICIAL NO Numéro officiel
	EXTREME BREADTH Largeur au fort	OVERALL HEIGHT (Measured from bottom of keel to highest point of ship) Hauteur hors-tout (à partir de l'extrémité inférieure de la quille au plus haut point du bateau)	OVERALL LENGTH Longueur hors-tout
	MAXIMUM DRAFT Tirant d'eau max.	HULL MATERIAL Matériau de coque	TYPE OF ENGINES (if left on board) Type de moteur (s'il est laissé à bord)
	MAT'L AND WEIGHT OF BALLAST LEFT ON BOARD Matériel et poids de lest laissé à bord		
NAME OF OWNER / Nom du propriétaire		ADDRESS OF OWNER / Adresse du propriétaire	
AIRCRAFT / Aéronef	TYPE / Type	MODEL / Modèle	SERIAL NUMBER Numéro de série
	REGISTRATION MARKS Marques d'immatriculation	CONSTRUCTION MATERIAL Matériau de construction	NATIONALITY Nationalité
	TOTAL WEIGHT OF AIRCRAFT Poids total de l'aéronef	OVERALL LENGTH Longueur hors-tout	OVERALL HEIGHT Hauteur hors-tout
	WINGSPAN Envergure		
NAME OF OWNER / Nom du propriétaire		ADDRESS OF OWNER / Adresse du propriétaire	
UNREGISTERED VEHICLES PLATFORMS OR OTHER MAN-MADE STRUCTURES Véhicules non immatriculés Plate-formes ou autres ouvrages de main d'homme	NAME OR NUMBER (if any) Nom ou numéro (s'il y a lieu)	DIMENSIONS Dimensions	TOTAL WEIGHT (Attach sketch or drawing, if available) Poids total (joindre un dessin ou un croquis si possible)
	PRINCIPAL MATERIALS OF CONSTRUCTION Principaux matériaux de construction		ESTIMATED WEIGHT OF EACH Poids approximatif de chacun
	NAME OF OWNER / Nom du propriétaire		ADDRESS OF OWNER / Adresse du propriétaire
	WHAT WAS USUAL OR LAST CARGO? / Quelle était la cargaison habituelle ou la dernière cargaison?		
HAVE ALL CARGO FUEL AND STORES BEEN REMOVED PRIOR TO DISPOSAL? Est-ce que tout le carburant et l'approvisionnement ont été enlevés avant l'abandon?		IF NOT, COMPLETE THE APPLICABLE PORTIONS OF FORM 1 AND ATTACH TO THIS APPLICATION Sinon, remplir les parties de la formule 1 qui s'appliquent et les joindre à la demande	
<input type="checkbox"/> YES Oui		<input type="checkbox"/> NO Non	

5 REASON FOR DISPOSAL AT SEA Raisons de l'abandon en mer							
6 STATE WHY ALTERNATE METHODS OF DISPOSAL ARE NOT ACCEPTABLE Indiquer pourquoi les autres méthodes d'élimination sont inacceptables							
7 GIVE PARTICULARS IF DISPOSAL AT SEA OF SHIPS, AIRCRAFT, ETC., WAS CARRIED OUT IN THE PAST Donner les détails des opérations d'abandon en mer de bateaux, d'avions, etc., effectuées dans le passé, s'il y a lieu							
8 NAME OF CARRIER (if not applicant) Nom du transporteur (s'il ne s'agit pas du requérant)		ADDRESS / Adresse					
9 NAME OF CARRIER'S AGENT (if applicable) Nom de l'agent du transporteur (s'il y a lieu)		ADDRESS / Adresse					
10 NAME OF INDIVIDUAL RESPONSIBLE FOR DISPOSAL ARRANGEMENTS ON BEHALF OF CARRIER Nom de la personne chargée des dispositions d'abandon au nom du transporteur		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;"> NAME / Nom </td> <td style="width: 50%; padding: 5px;"> TITLE / Titre </td> </tr> <tr> <td style="height: 40px;"></td> <td style="height: 40px;"></td> </tr> </table>		NAME / Nom	TITLE / Titre		
NAME / Nom	TITLE / Titre						

PART 8 - DETAILS OF DISPOSAL ARRANGEMENTS / PARTIE 8 - DISPOSITIONS D'ABANDON	
11 PROPOSED DATE OF DISPOSAL Date(s) proposée(s) de l'abandon	12 DESCRIBE ROUTE TO BE FOLLOWED AND GEOGRAPHICAL COORDINATES OF PROPOSED DISPOSAL SITE Donner le trajet qui sera suivi et les coordonnées géographiques du lieu d'abandon proposé
13 PORT OF DEPARTURE Port de départ	
14 DEPTH OF SEA AT PROPOSED DISPOSAL SITE Profondeur de la mer au lieu d'abandon	
15 WILL SHIP OR AIRCRAFT ETC., PROCEED TO PROPOSED DISPOSAL SITE UNDER ITS OWN POWER. IF NOT GIVE DETAILS Le bateau ou l'aéronef, etc., se rendra-t-il lui-même au lieu d'abandon proposé? Sinon, expliquer	
16 ESTIMATED TIME REQUIRED AT DISPOSAL SITE TO CARRY OUT DISPOSAL OPERATION Temps approximatif de l'opération au lieu d'abandon	
17 HOW WILL THE SHIP OR AIRCRAFT, ETC., BE PREPARED FOR DISPOSAL TO ENSURE THAT IT WILL SINK AND REMAIN IN PLACE? De quelle façon le bateau ou l'aéronef, etc., sera-t-il préparé pour l'abandon afin qu'il coule et reste en place?	
18 DESCRIBE OTHER WORK CARRIED OUT TO ENSURE THAT THE SHIP OR AIRCRAFT DOES NOT EMIT SUBSTANCES SUBSEQUENT TO DISPOSAL Décrire les autres préparatifs destinés à faire en sorte que le bateau ou l'aéronef ne laisse échapper aucune substance après l'abandon.	

When the applicant is a corporation, give the title or capacity and telephone number of the person signing this application.
Si le requérant est une société, donner le titre ou la fonction et le numéro de téléphone du signataire de la demande.

DATE

SIGNATURE OF APPLICANT / Signature du requérant

TITLE / Titre

TEL. NO. / N° de tél.

APPLICATION FOR A PERMIT TO DISPOSE OF A SUBSTANCE AT SEA BY PLACING IT ON ICE
DEMANDE D'AUTORISATION D'ABANDON D'UNE SUBSTANCE SUR LA GLACE

PART A - BASIC INFORMATION / PARTIE A - RENSEIGNEMENTS GÉNÉRAUX			
1 NAME OF APPLICANT / Nom du requérant			TEL. NO / NO de tél.
ADDRESS / Adresse		2 TYPE OF BUSINESS / Type d'entreprise	
3 NAME(S) OF INDIVIDUAL(S) RESPONSIBLE FOR LOADING AND DUMPING ON BEHALF OF APPLICANT Nom de la personne chargée du chargement et de l'immersion au nom du requérant	NAME(S) / Nom(s)	TITLE(S) / Titre(s)	TEL. NO(S) / NO(s) de tél.
4 SUBSTANCE (Give chemical, common, trade, or other name) Substance (Donner l'appellation chimique, commune, commerciale ou autre)		FORM Forme <input type="checkbox"/> SOLID Solide <input type="checkbox"/> SLUDGE Boue <input type="checkbox"/> GASEOUS Gaz <input type="checkbox"/> LIQUID Liquide OTHER (Specify) Autre (préciser)	
TOTAL QTY TO BE DISPOSED OF Quantité totale à abandonner	5 SOURCE OF SUBSTANCE Source de substance	NAME OF FIRM (if applicable) Nom de l'entreprise (s'il y a lieu)	
ADDRESS / Adresse		TYPE OF BUSINESS / Type d'entreprise	TEL. NO / NO de tél.
DESCRIBE PREVIOUS DISPOSAL METHODS / Décrire les méthodes d'élimination utilisées auparavant			
6 DESCRIBE ACTIVITY FROM WHICH SUBSTANCE ORIGINATES Décrire l'activité responsable de la formation de la substance		7 WHY IS IT NECESSARY TO DISPOSE OF SUBSTANCE ON ICE? Pourquoi est-il nécessaire d'abandonner la substance sur la glace?	
8 DESCRIBE ALTERNATIVE DISPOSAL METHODS AND REASONS WHY THEY ARE NOT ACCEPTABLE Décrire d'autres méthodes d'élimination et donner les raisons pour lesquelles elles sont inacceptables			
9 NAME OF CARRIER COMPANY Nom de la compagnie de transport		ADDRESS / Adresse	TEL. NO / NO de tél.
10 NAME OF CARRIER'S AGENT (if applicable) Nom de l'agent du transporteur (s'il y a lieu)		ADDRESS / Adresse	TEL. NO / NO de tél.
11 NAME(S) OF INDIVIDUAL(S) RESPONSIBLE FOR LOADING AND DUMPING ON BEHALF OF CARRIER Nom de la personne chargée du chargement et de l'immersion au nom du transporteur	NAME(S) / Nom(s)	TITLE(S) / Titre(s)	TEL. NO(S) / NO(s) de tél.

PART B - DETAILS OF DISPOSAL ARRANGEMENTS / PARTIE B - DÉTAILS DES DISPOSITIONS D'ABANDON

12 GIVE PARTICULARS OF THE MANNER IN WHICH THE SUBSTANCE(S) TO BE DISPOSED OF WILL BE TRANSPORTED TO THE PROPOSED SITE OF DISPOSAL AND THE ROUTE TO BE FOLLOWED, STATING NAME OR NUMBER, IF ANY OF VEHICLE(S) TO BE USED. ALIVE NAME AND ADDRESS OF VEHICLE OWNER.

Expliquer la façon dont la substance à abandonner sera transportée au lieu d'abandon proposé et le trajet qui sera suivi en donnant le nom ou le numéro du véhicule utilisé s'il y a lieu, de même que le nom et l'adresse du propriétaire.

13 POINT OF DEPARTURE
Point de départ

14 DATES ON WHICH PROPOSED DISPOSAL WILL BE CARRIED OUT
Date de l'abandon proposé

15 DESCRIBE PACKAGING OR CONTAINERIZATION OF THE WASTE
Décrire la méthode d'emballage ou de conditionnement des déchets

16 GEOGRAPHICAL COORDINATES & APPROX. SHAPE OF PROPOSED DISPOSAL SITE (Submit appropriately marked chart or map)
Coordonnées géographiques et forme approx. du lieu d'abandon proposé (Joindre une carte ou un plan convenablement annoté)

Lat.:
Long.:

17 IS THE SUBSTANCE TO BE DISPOSED OF EDIBLE BY FAUNA COMMON TO THE REGION?
La substance à abandonner est-elle comestible par la faune commune à la région?

18 WHAT IS THE MINIMUM DEPTH OF WATER AT THE PROPOSED SITE WHEN ICE COVER IS PRESENT?
Quelle est la profondeur minimale de l'eau au lieu proposé lorsque la couverture de glace est prise?

PART C - PHYSICAL, CHEMICAL AND BIOLOGICAL CHARACTERISTICS OF SUBSTANCES

PARTIE C - PROPRIÉTÉS PHYSIQUES, CHIMIQUES ET BIOLOGIQUES DE LA SUBSTANCE

NOTE: In carrying out any necessary tests the analyst should follow documented procedures and be prepared to describe these procedures in detail.

NOTE: Pour effectuer les essais nécessaires, l'analyste doit suivre les méthodes indiquées et être prêt à les décrire en détail.

19 PHYSICAL PROPERTIES / Propriétés physiques

(a) LIQUIDS Liquides	SPECIFIC GRAVITY Poids spécifique	VAPOUR PRESSURE Tension de vapeur	MISCIBILITY WITH SEAWATER Miscibilité avec l'eau de mer	VISCOSITY Viscosité	ODOUR Odeur	COLOUR Couleur
(b) SOLIDS SOLUBLE IN WATER Solides solubles dans l'eau	SPECIFIC GRAVITY Poids spécifique	SOLUBILITY IN SEAWATER Solubilité dans l'eau de mer			ODOUR Odeur	COLOUR Couleur
(c) SOLIDS INSOLUBLE IN WATER Solides insolubles dans l'eau	PARTICLE SIZE DISTRIBUTION AND SETTLING RATE IN SEAWATER Grosseur des particules et taux de sédimentation dans l'eau de mer				ODOUR Odeur	COLOUR Couleur

20 CHEMICAL AND BIOCHEMICAL PROPERTIES / Propriétés chimiques et biochimiques

(a) ARE SUBSTANCES NAMED IN SCHEDULES I AND II OF THE ACT PRESENT?
Y a-t-il des substances mentionnées aux annexes I et II de la Loi?

☐ YES
Oui

☐ NO
Non

IF YES, IN WHAT CONCENTRATIONS?
Si oui, dans quelles concentrations?

(b) CHEMICAL STABILITY Stabilité chimique	OXIDATION REDUCTION POTENTIAL Potentiel d'oxydoréduction	CHEMICAL OXYGEN DEMAND Demande chimique d'oxygène
	REACTIVITY WITH SEAWATER Réactivité avec l'eau de mer	CHANGE ON EXPOSURE TO ATMOSPHERE AND SUNLIGHT Changement au contact de l'atmosphère et de la lumière du soleil
(c) BIOCHEMICAL BEHAVIOR Comportement biochimique	BIOCHEMICAL OXYGEN DEMAND AT 20° Demande biochimique d'oxygène à 20°	BIOTRANSFORMATION Biotransformation
	SOLUBILITY IN ANIMAL OR PLANT LIPIDS Solubilité dans les lipides animaux ou végétaux	IF SUBSTANCE IS A PESTICIDE GIVE PCP REGISTRATION NO. OR COMMON NAME S'il s'agit d'un pesticide, donner le numéro d'enregistrement des produits antiparasitaires ou le nom commun

21 BIOACCUMULATION BY MARINE ORGANISMS / Bio-accumulation par les organismes marins	
(a) CONCENTRATION FACTOR FOR FISH, MACROINVERTEBRATES AND PLANKTON Facteur de concentration pour le poisson, les macro-invertébrés et le plancton	(b) RATE OF UPTAKE AND RETENTION (biological half life) Taux d'ingestion et de rétention (demi-vie biologique)
(c) TAINING, COLOUR CHANGE AND OTHER UNDESIRABLE CONTAMINANT EFFECTS ON SEAFOOD Coloration, changement de couleur et autres effets de contamination indésirables sur les fruits de mer	
22 TOXICITY TO MARINE ORGANISMS (96 hour LC50 in mg/l) Toxicité pour les organismes marins (CL50 après 96 heures, en mg/l)	
23 DESCRIBE HAZARD TO HUMAN HEALTH BY / Décrire les dangers pour la santé humaine par	
(a) ORAL INTAKE (LD50 in mg/kg) Ingestion orale (DL50 en mg/kg)	(b) SKIN CONTACT Contact avec la peau
(c) INHALATION / Inhalation	

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END

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